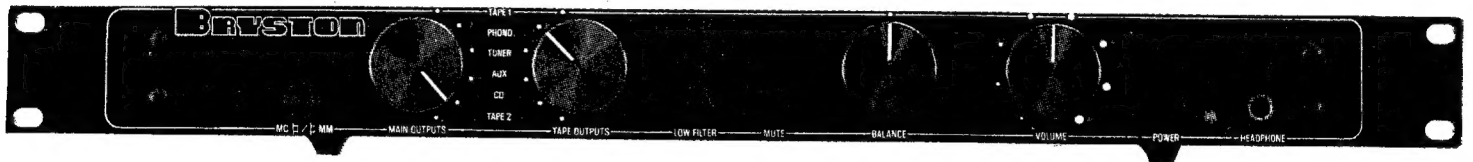


# BRYSTON



## INSTRUCTION MANUAL FOR 11B/12B PRE-AMPLIFIER

Congratulations on your selection of the very finest sound equipment. Your Bryston preamplifier has been engineered to provide many years of trouble-free, highly musical listening enjoyment.

This instruction manual refers to the Model 12B. With the exception of the phono inputs, the Model 11B preamplifier is identical, and the instructions pertain to it in exactly the same way. Where a difference occurs, it will be noted in the text.

The Model 12B is a basic signal preamplifier with switching facilities for all the sources likely to be used by even the most elaborate domestic sound system, including dubbing capability for two tape recorders, and the convenience of recording from any source while simultaneously listening to any other through the speakers. The included diagram will illustrate the switching functions of the Bryston Model 12B preamplifier.

### Phono Inputs; Including Moving Coil

The Model 12B is supplied with an internal moving-coil step-up transformer. This extremely wide-band transformer, with almost no added noise or distortion, increases the voltage gain through the phono section by 22.5dB, and adjusts the input impedance to suit the vast majority of moving-coil cartridges. (It is available on special order with 6dB less gain, and a higher input impedance, for those few high-output MC cartridges which may perform better with these settings).

The 12B will also accept moving-magnet cartridges by switching the MC transformer out via a switch on the front panel. In this case, the cartridge is plugged into the MM inputs on the rear panel. The MM inputs (only) are equipped with input loading capacitors of about 275 pf per channel. When added to the normal turntable wiring capacitance, this yields about 300-400 pf, which is in the optimum range for most cartridges. (This internal phono capacitance may be special-ordered to any value at no extra charge).

The Model 11B is identical to the Model 12B except that it is not equipped with the MC transformer. Thus both phono inputs become MM inputs, as above. They may be selected between Phono 1 and

Phono 2 via the switch on the front panel. (The MC transformer may be retrofitted at any time, converting the preamp to a 12B). Since the phono stage on the Model 12B inverts absolute phase, the MC transformer is connected to invert phase also. Thus, MC cartridges play in proper phase with no special connection necessary. In case of MM cartridges, reversing the hot and ground leads on the cartridge pins is a convenient way of obtaining the same function.

### Tape Monitor Function

Although the 12B's tape monitor function is arranged differently from most standard preamplifiers, it is not complicated to use. The two selector switches operate independently, and affect only the outputs to which their labels refer. **Thus the "MAIN OUTPUT" switch is used as the tape monitor, also.** Include your tape deck in the preamp's tape loop in the normal way (i.e., its record head is connected to Tape 1 output, and its playback head is plugged back into Tape 1 input). **To monitor the recording, just move the MAIN OUTPUT switch to "Tape 1".** A second tape deck may be included in the tape loop in a similar manner, using Tape 2 input and output, and "Tape 2" selector position for monitoring.

### Two Tape Recorders; Dubbing Facility

Plug in the playback and record heads of the two decks to their respective tape inputs and outputs, as above. Normally, both decks will receive the same signal for recording. **When "Tape 1" is selected on the TAPE OUTPUT switch, however, the playback head of deck 1 is connected to the record head of deck 2, via Tape 2 output.** This obviously allows direct dubbing from Tape Deck 1 to Tape Deck 2. **Selecting "Tape 2" on the TAPE OUTPUT switch allows dubbing in the opposite direction by reversing these connections.**

### External Equalizer, Noise Reduction, or Other Audio Processor

An equalizer, noise reducer, etc., may be included in the tape loop (as shown in the diagram) by connecting its input to one of the tape outputs, and its output back to (the

same numeral) tape input. **Turn the MAIN OUTPUT switch to (that numeral) "Tape" position whenever you wish to use the audio processor in the signal path.** During that time, **the TAPE OUTPUT switch is used as the selector for whichever source is to be processed.** Turning the MAIN OUTPUT switch back to this source position will bypass the processor.

### Headphone Jack

The Model 12B is equipped with a headphone jack for convenient, private listening. The signal is taken directly from the output circuit which normally feeds the power amplifier, and is thus controlled by the volume knob. This output will drive headphones of any type, but lower impedance headphones may require somewhat more volume control rotation for the desired loudness. To facilitate headphone listening without disturbing others, the preamplifier automatically disconnects the direct feed to the power amplifier. (This is indicated by the green pilot light on the front panel changing to red whenever the output relay is opened). This circuit does not disconnect the remote outputs. (See under "Remote Output"). Since some headphones may require substantial volume control rotation, **be sure to reduce the volume before removing the headphone plug, or you may be startled by the high sound level when the relay re-connects the amplifier.**

### Remote Output

The 12B preamplifier is equipped with a special remote output, which is switched via the "Main Output" selector, but which exits ahead of the volume control. This line-level output may then be used to drive amplifiers in remote locations, with local volume controls. This allows remote systems to function independently of the volume level set in the main system. The automatic amplifier disconnect which is part of the headphone circuit does **not** affect these remote outputs. (As an option, this function may be replaced by a second set of main outputs, connected in parallel with the first. This allows the convenient connection of two amplifiers which are desired to be controlled together, such as subwoofer installations, or passively bi-amplified systems).

## Low Filter

The inflection point of the rumble filter has been chosen at 31.7Hz to correspond to the lowest signal frequencies likely to be found in recorded music, and to a suggested revision to the RIAA recording curve for LP discs. For these reasons, and for the more important reason of avoiding low frequency transient overshoot, ringing and phase misalignment, the low filter is a "minimum" type, with a 6dB/octave slope below cutoff. This is quite effective in reducing subsonic woofer-wooble and its attendant intermodulation effects, however, since the most problematic turntable and warp-induced rumble frequencies, in the area of 2-5Hz, are reduced an average of about 20dB or a factor of 100 in terms of power demand. **The low filter switch is active in the 'In' position, and affects only the phono inputs.**

## Mute Switch

The listener often is called momentarily away from critical listening, to answer the phone for example, and wishes to reduce the gain for a short time without disturbing the volume control setting. The mute switch reduces preamp gain by 20dB. Thus the music may still be heard, but at a background level. This is also useful for changing records, cueing the stylus manually to a particular song, cleaning the stylus with a brush, etc. **The mute switch is active in the 'In' position and affects only the main outputs without disturbing the tape outputs.**

## Mono Function

Occasionally a system will display some offset in gain favouring one channel over the other due to slight differences in speaker efficiency, differences in speaker loading, or a somewhat off-center listening position dictated by room decor. Thus it is convenient to "mono" the signal to obtain the most unambiguous center image, convenient to adjust-

ing the balance control. For reasons of simplicity, rather than having a separate switch for this function, **the "Mute" switch also connects the two channels in Mono.** Obviously, the listener may wish to advance the volume control to provide sufficient level for establishing center image. **Do not forget to reduce the volume control again before deactivating the mute switch in this case, or you may be startled by the sudden increase in sound level.** The balance control is a tailored inflection type which has very gradual action near the center of rotation for fine adjustments to the left-right balance of the stereo image.

## Turn On Delay

The Model 12B contains an output relay with an approximate 3-second delay at turnon, to allow any transient thumps to settle. The relay opens instantly when the preamp is switched off to prevent any power-supply decay artifacts from appearing at the outputs. The relay is hermetically sealed in an inert atmosphere to completely eliminate contact contamination and provide nearly infinite lifetime (rated in tens of billions of cycles). This same relay is employed in the automatic amplifier disconnect function which is part of the headphone circuit, and in the protection mechanisms connected into the power supply. Whenever the preamplifier is under power, and the relay is open for any reason, the green pilot light on the front panel changes to red. (Since the power-supply filter capacitors are quite large, the red LED indication will fade slowly after the preamp is switched off).

## Accessory Outlets

The 12B includes three 3-prong grounded, 120 volt receptacles on the rear panel, two switched, one unswitched. **Please observe the caution printed below the receptacles regarding maximum**

**power draw from these outlets. Large power amplifiers, especially including the Bryston Models 3B and 4B should not be plugged into these receptacles.** To do so may damage the preamp's power switch. It is permissible to plug the Bryston 2B-LP into these outlets, however, or any class AB amplifier up to 50, (or class A amplifier up to 15) watts per channel. In general, it is inadvisable to switch large power amplifiers on and off by the switch in a preamplifier, for the above reason, and also because it is likely to cause a fluctuating voltage-drop on the preamplifier's line cord, which in worst case conditions can become an audible problem.

## DC Power-Supply Output

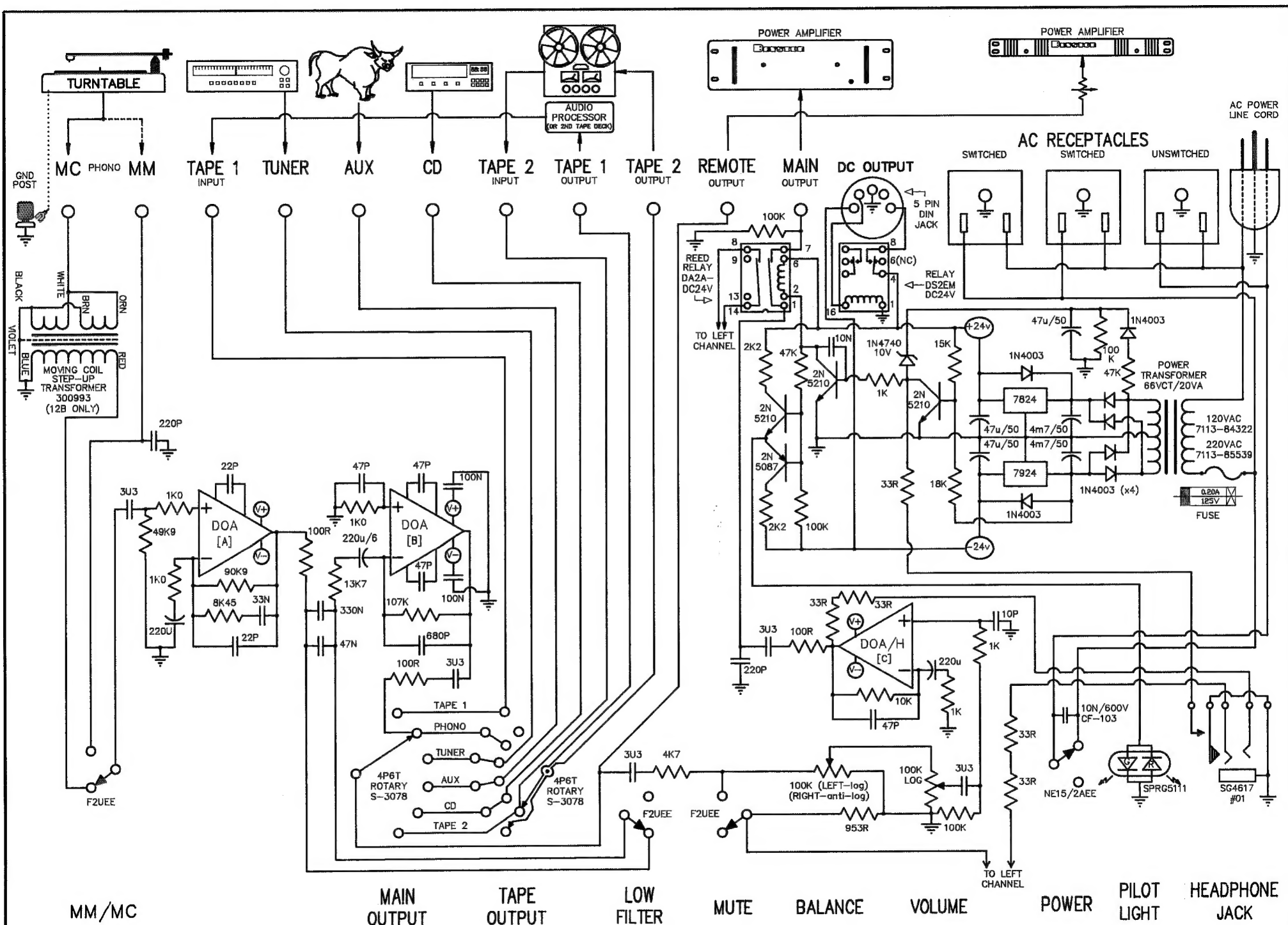
On the rear panel of the Model 12B (and 11B) there is a DIN connector which provides  $\pm 24V$  DC of regulated power. This is provided for future Bryston products, such as equalizers, electronic crossovers and the like, which will be available with or without power supply, for reasons of economy. This output is fully protected, and contains a circuit which opens the output relay automatically if excessive current is drawn.

The Twelve-B has been designed from a rational, function-oriented ideal of maximum musical accuracy, with an absolute minimum of useless gadgetry or extraneous controls. The signal-handling circuit is novel and fundamentally correct, both electrically and more important, sonically. We believe you will find a renewed sense of awareness of the listening pleasure in your music collection, played through your Bryston preamplifier. All your signal sources will sound cleaner and more musically transparent than you may have experienced before.

Please do not hesitate to write us if you have any questions or comments about any of our products. Your opinion is of paramount importance to us.

# BRYSTON<sup>®</sup> LTD. LTÉE.

57 WESTMORE DRIVE, REXDALE, ONTARIO, CANADA M9V 3Y6 TELEPHONE: 416-746-1800, TELEX: 06-989548  
IN THE U.S.A. TELEPHONE 802-223-6159



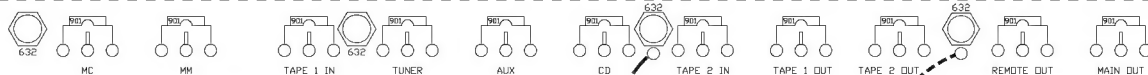
N.B. ONLY RIGHT CHANNEL SHOWN; LEFT CHANNEL IDENTICAL EXCEPT AS NOTED.

**BRISTON**

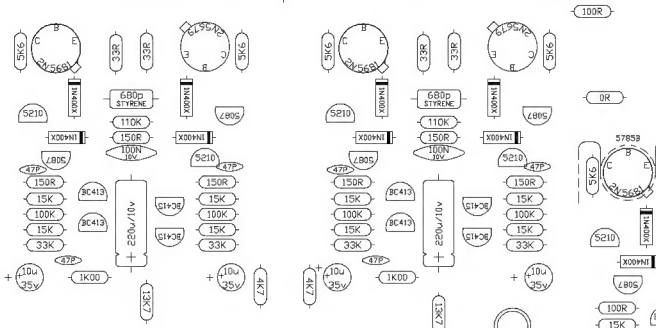
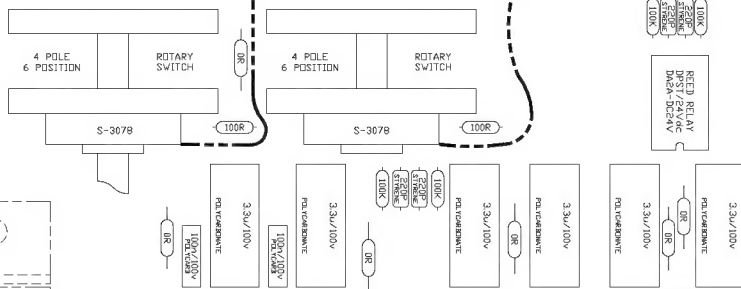
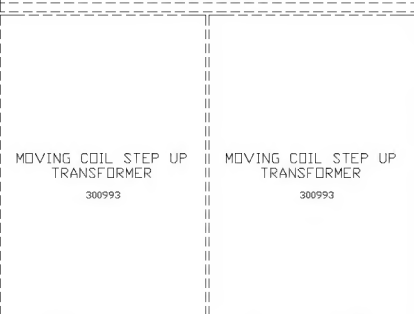
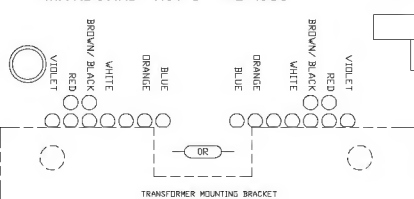
**11B/12B PRE-AMP SCHEMATIC**

**REVISION #5**

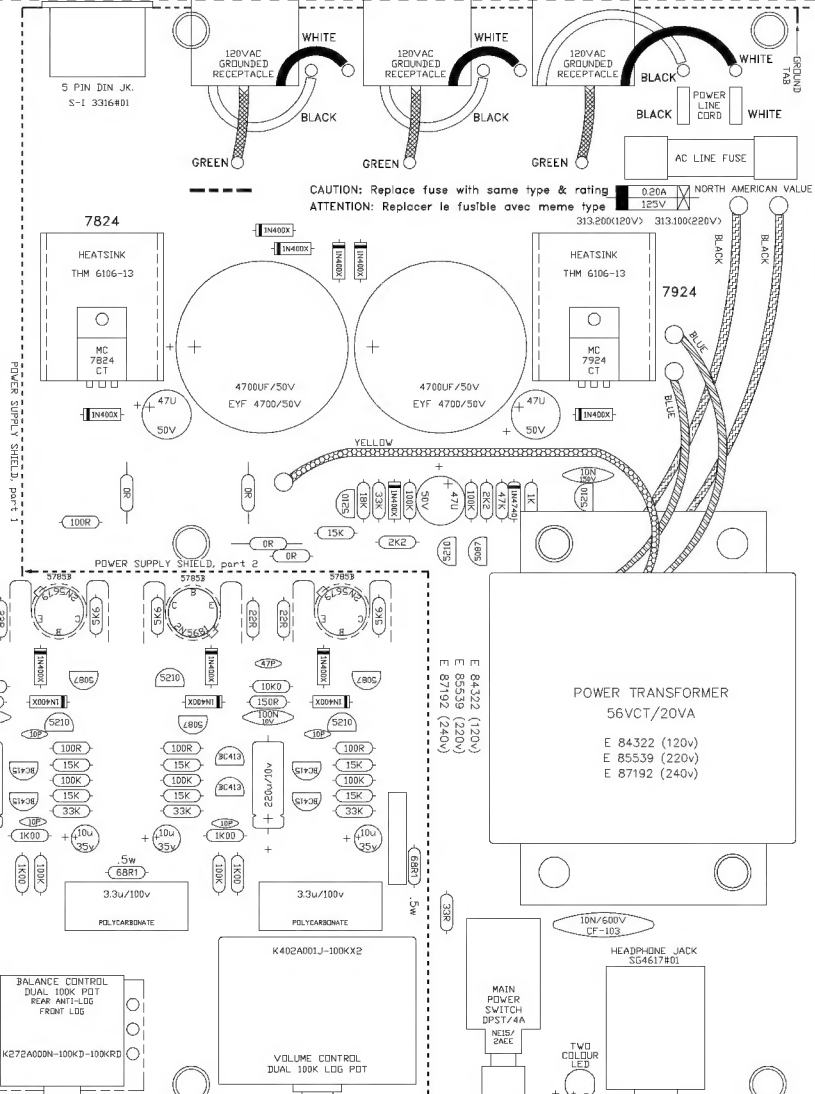
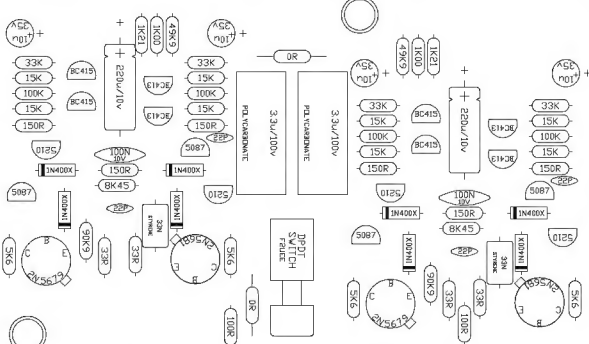
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# **Dryston** 11B/12B PREAMPLIFIER MAINBOARD Rev 6 FEB 1989



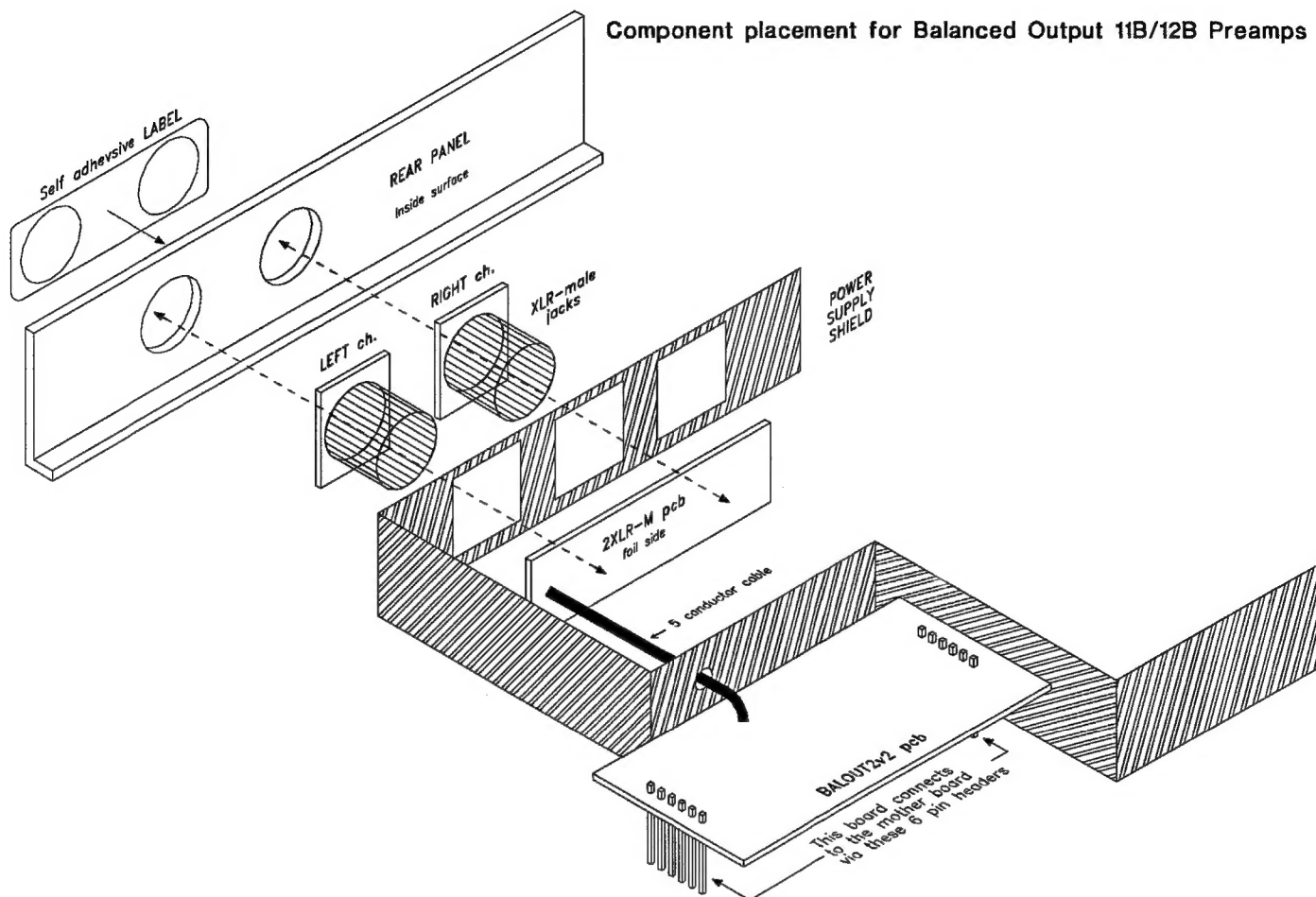
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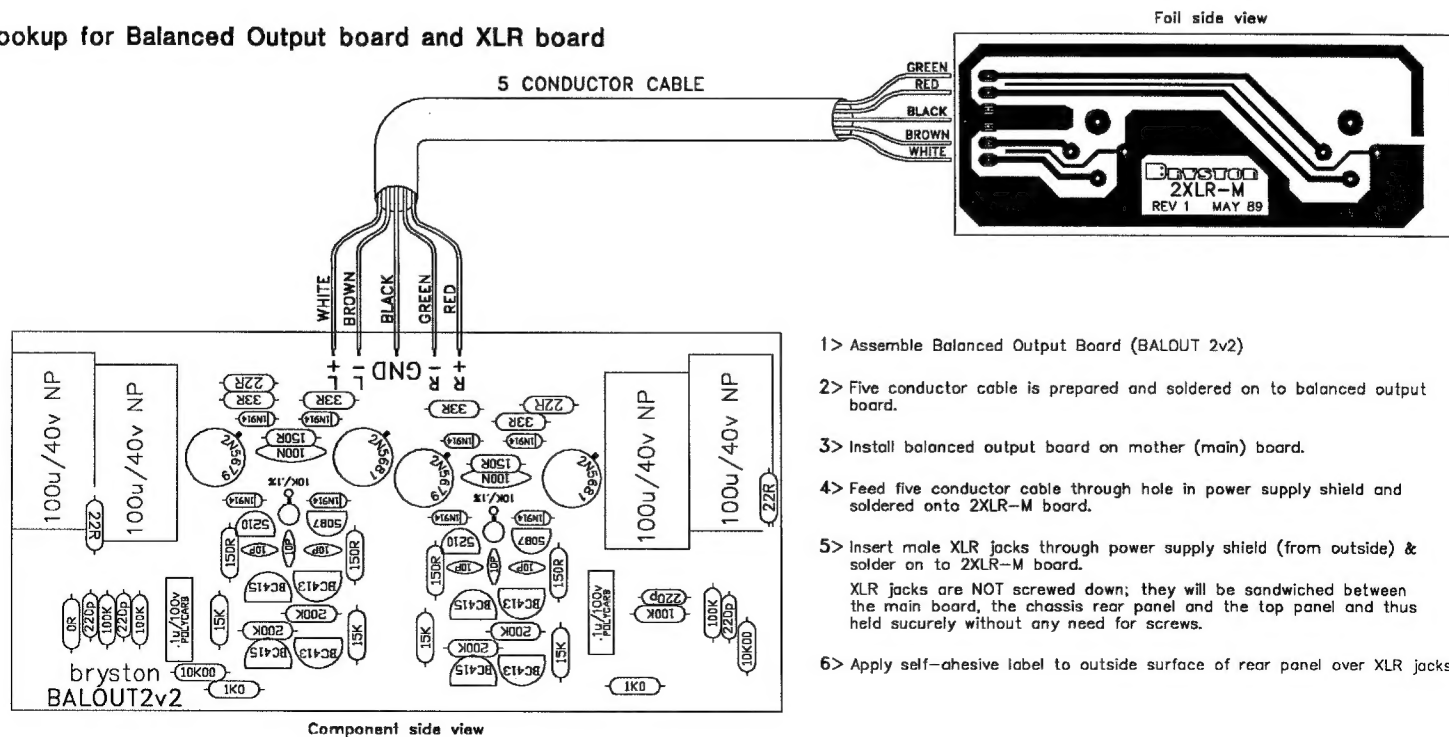


## 11B/12B Preamps with Balanced Outputs

### Component placement for Balanced Output 11B/12B Preamps



### Hookup for Balanced Output board and XLR board



- 1> Assemble Balanced Output Board (BALDUT 2v2)
- 2> Five conductor cable is prepared and soldered on to balanced output board.
- 3> Install balanced output board on mother (main) board.
- 4> Feed five conductor cable through hole in power supply shield and soldered onto 2XLR-M board.
- 5> Insert male XLR jacks through power supply shield (from outside) & solder on to 2XLR-M board.  
XLR jacks are NOT screwed down; they will be sandwiched between the main board, the chassis rear panel and the top panel and thus held securely without any need for screws.
- 6> Apply self-adhesive label to outside surface of rear panel over XLR jacks